

REMARKS

Upon entry of the present amendment, the claims in the application are claims 4-6, 14 and 15, of which claim 4 is independent. The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. It is contended that by the present amendment, all bases of objection and rejection set forth in the Office Action have been traversed and/or overcome. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

Initially, applicant thanks the Examiner for his indication that claims 4-6 are allowable.

Claim 14 is amended herein, and new claims 1-3 and 7-13 have been canceled. Applicant respectfully submits that all of such amendments are fully supported by the original disclosure, including the drawings, since all the amendment simply changes the dependency of claim 14 from now canceled claim 1 to allowed claim 4. Applicant also respectfully submits that the amendments do not raise any new issues for consideration by the Examiner or introduce any impermissible "new matter" into the application.

Claim Rejections - 35 USC §102

The Examiner has rejected independent claim 1 (defining that the transmitting antenna is installed in the proximity of the center of the vehicle) and dependent claims 14 and 15 under 35 USC 102(e) as being anticipated by Onuma et al. (US 6,798,337). It is the Examiner's position that: regarding claim 1, Onuma discloses a vehicular electronic key system comprising the control apparatus which includes a transmitting antenna, the electronic key permits transmission of a response signal in response to receiving of a request signal transmitted from the control apparatus through the transmitting antenna, and the transmitting antenna is installed in the proximity of the center of said vehicle (col. 1, lines 35-44, col. 4, lines 11-14 and 60-67); regarding claim 14, Onuma discloses wherein the control apparatus and the electronic key communicate at regular intervals during operation

of the vehicle (col. 6, lines 44-51); and regarding claim 15 Onuma discloses wherein a warning is issued by the control apparatus if communication between the control apparatus and the electronic key fails for a predetermined length of time (col. 6, lines 62-67, and col. 7, lines 1-2).

Applicant's Response

Applicant has carefully considered the Examiner's rejection and respectfully disagrees because the use of a (single) centrally located transmitting antenna is contrary to Onuma's system, which necessarily includes multiple transmitting antennas located near different portions of the (four wheel) vehicle, e.g., one antenna near the driver's side doors, one near the passenger's side doors and one near the driver's seat. As disclosed by Onuma, the use of multiple antennas located near various portions of the vehicle permits the location of the electronic key can be carefully monitored to prevent the key from being inadvertently locked in the vehicle. Also, the rejection of dependent claims 14, 15 is further unfounded because Onuma system fails does not involve periodic communications between the control apparatus and the electronic key at regular intervals as required by claims 14, 15.

The present invention generally relates to an electronic key system for a vehicle wherein radio communication is performed between a transmitter/receiver (electronic key) carried by a user and a control apparatus mounted on an actual vehicle. The control apparatus verifies an ID transmitted thereto from the electronic key with an ID registered therein. Thus, if a result of the verifying that the IDs are coincident with each other is obtained, then the action desired by the user is performed, e.g. door locking, engine starting, etc. Specifically, the present invention relates to such an electronic key system on a motorcycle (two wheeled vehicle).

In conventional electronic key systems, as noted in the Background portion of the present specification, multiple antennas/transmitter are mounted on the vehicle in order to allow multiple operations to be controlled by the electronic key system (such as in the system of Onuma). For

example, the same electronic key could be used for unlocking the doors or the trunk of a vehicle and also for starting the engine of the vehicle. Because the different operations being performed by the same electronic key, in order to ensure that communication occurs between the transmitter and receiver such that the operation will be allowed to be performed, multiple transmitters are placed on the vehicle. In the present invention the need for these multiple transmitter/antennas is eliminated by placing a single transmitting antenna in the proximity of the center of the vehicle.

This is not shown in the disclosure of Onuma, which discloses an electronic key system that is used to prevent a driver from accidentally locking the electronic key inside of the passenger compartment of the vehicle. The Examiner's position in this regard is contradicted by the disclosure of Onuma and the discussion at paragraph [009] of the present application. Onuma expressly discloses the use of multiple transmitting antennas to ensure that communication with the receiver is possible at all times when the electronic key is within the vicinity of the vehicle, as discussed in the Background discussion of the present application. Such a system using multiple transmitting antennas is disadvantageous due to the increase in cost and increase in weight due to the increase in the number of parts placed on the vehicle. The system of Onuma also uses multiple transmitting antennas due to the range and communicable area associated with each of the sensors. The use of multiple antennas is necessary in the invention of Onuma since each antenna has a communicable area limited to the area around the antenna, and signals coming from the transmitter are not strong enough to pass through the vehicle. Therefore, at least two transmitting antennas are needed for each side of the vehicle.

As will be appreciated, it would be contrary to Onuma's actual invention to use a single transmitting antenna placed in the vicinity of the center of the vehicle, such that it would not otherwise be considered obvious to persons skilled in the art to modify Onuma's invention in a manner corresponding to the claimed invention .

Although the applicant does not agree with the rejection of claims 1, 14 and 15, in order to

expedite the prosecution of the application, the applicant has canceled claim 1 herein and amended claim 14 to depend from allowed claim 4. Based on the Examiner's indication that claims 4-6 are allowed, reconsideration of, and withdrawal of, the rejection of claims 14 and 15 are respectfully requested.

Claim Rejections 35 USC §103

The Examiner has rejected claims 2, 3, and 7-13 under 35 USC 103(a) as being unpatentable over Onuma et al. Regarding claims 2 and 3, it is the Examiner's position that: Onuma does not disclose wherein said transmitting antenna is installed at a position within a range from an upper portion of the vehicle to a lower portion of the vehicle, and within a range from a point at one fourth of a wheel base to another point at three-fourths of the wheel base with reference to the center of a front wheel of said vehicle; it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Onuma in order to have the transmitting antenna installed at a position within a range from an upper portion of the vehicle to a lower portion of the vehicle and within a range from one fourth of a wheel base to another point at three fourths of the wheel base with reference to the center of a front wheel of the vehicle when desired since Onuma discloses the antenna 12a installed inside of the vehicle (col. 4, lines 11-14).

Regarding claim 7, it is the Examiner's further position that: while Onuma teaches most limitations of independent claim 7, Onuma fails to disclose the transmitting antenna being installed on the vehicle in a location which provides a transmission range which includes at least a space occupied by a vehicle operator during vehicle use, such a limitation is just a matter of design choice to one of ordinary skill in the art since the location of the antenna presents no new or unexpected results, so long as the transmitting antenna successfully receives the signal from the electronic key. Still further, it is the Examiner's position regarding claims 8-13, Onuma discloses each of the claimed features or that the claimed features would have been obvious based on those reasons as discussed with regards to claim 7.

Applicant's Response

The applicant respectfully disagrees with the Examiner's rejection and traverses such rejection for those reasons as stated above with respect to the rejection of claim 1, noting that the Examiner is basing his obviousness rejections only upon the Onuma reference, whereas the Examiner's allegations of obvious design choice, etc. are not supported by any teachings of the reference or any other evidence of record (other than impermissible hindsight which the Examiner has gained from the applicant's disclosure) and are not a proper basis for rejection under 35 USC 103.

Although the applicant does not agree with the rejection of claims 2-3 and 7-13, in order to expedite the prosecution of the application, the applicant has canceled claims 2-3 and 7-13 herein. Therefore, the only claims remaining in the present application are allowed claims 4-6 and claims 14 and 15, which now depend from allowed claim 4.

Based on the foregoing, it is believed that the Examiner's rejection is overcome, and the application is now in condition for allowance. A Notice of Allowance is therefore respectfully requested.

Conclusion

For all of the above mentioned reasons, applicant requests reconsideration and withdrawal of the rejections of record, and allowance of the pending claims.

Applicant respectfully submits that the above amendments are fully supported by the original disclosure, including the drawings and claims, no new matter is introduced by the above amendments. The application is now believed to be in condition for allowance, and a notice to this effect is earnestly solicited.

If the Examiner is not fully convinced of the allowability all of the claims now in the application, applicant respectfully requests that the Examiner telephonically contact applicant's undersigned representative to expeditiously resolve prosecution of the application.

Favorable reconsideration is respectfully requested.

Respectfully submitted,



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